UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,951	12/11/2001	Brian Spinar	ENSEMB.026A	3656

20995 7590 12/16/2004

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER	
WILSON, ROBERT W	

ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/014,951	SPINAR ET AL.	
	Examiner	Art Unit	
	Robert W Wilson	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-74* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-74* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/15/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1.0 The application of Spinar et. al. entitled "Method and system for adaptively obtaining bandwidth allocation requests" which was filed on 12/11/01 and requests priority based upon provisional application 60/257,525 dated 12/22/2000

Claim Rejections - 35 USC § 102

2.0 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3.0 **Claims 1-47** are rejected under 35 U.S.C. 102(a) as being anticipated by Stanwood et al. (WO 00/72626 dated 11/30/2000) which is an IDS document of record.

Referring to **Claim 1**, Stanwood teaches: A method of obtaining bandwidth request from a plurality of users of a communication base station which provides communication uplink bandwidth on request to the users (The Base Station 106 per Fig 1 receives request for bandwidth from the CPE for uplink communications per Fig 1 or users) the method comprising:

Selecting a communication parameter which varies over time (The base station selects bandwidth allocations values which have been stored in the subframe MAP per Fig 6)

Determining and storing a parameter value representing the communication parameter applicable to a particular user (The Base Station stores values of bandwidth allocation in the subframe MAP per Fig 6 that apply to a particular user)

Selecting a polling rate for the particularly user in accordance with the parameter value stored for that user (The Base Station selects individual polling, multicast polling, or broadcast polling which are different rates based upon the bandwidth availability and the stored value in the uplink subframe map table per Fig 6)

Periodically polling the particular user for bandwidth requests at the selected polling rate (The base station periodically polls the particular CPE or user at the individual polling rate for bandwidth request per Fig 6);

(i) updating the stored parameter value for the particular user to reflect the change in the communication parameter quantity applicable to the particular user (The Base station updates the uplink subframe map table based upon the bandwidth request per Fig 60

(ii) changing the polling rate for the particular user in a response to the changed parameter value (The base station monitors the bandwidth utilized and the bandwidth requested and if there is inadequate bandwidth to perform individual polling then the base changes polling to the CPE based upon available bandwidth per Fig 6)

In Addition Stanwood teaches:

Regarding **Claim 2**, further comprising selecting a plurality of communication parameters, and changing the polling rate in response to changes in any of the communication parameters (information rate or quality of service or communication parameters per Pg 2 lines 30-33. Changing polling rate per Figs 6 & 8)

Regarding **Claim 3**, further comprising selecting a common communications parameter common to a plurality of users sharing a link, and changing the polling rate for the particular user in response to changes in the common parameter (Bandwidth allocation or common communication parameter and changing poling rate based upon amount of bandwidth per Figs 6 & 8)

Regarding **Claim 4**, further comprising selecting a common communications parameter reflective of composite activity of a plurality of users sharing a link and changing the polling rate for the particular user in response to changes in the common parameter (Bandwidth allocation or composite activity communication parameter and changing the polling rate based upon amount of bandwidth per Figs 6 & 8)

Regarding **Claim 5**, wherein polling comprises providing unrequested uplink bandwidth as an opportunity to request further bandwidth (Additional bandwidth can be provided for polling per Figs 8 & 9)

Regarding **Claim 6**, wherein polling comprises providing unrequested uplink bandwidth across a broadband wireless communication link (Fig 1, Fig 6, Fig 8, and Base Station allocation CBR or broadband per Pg 9 lines 25-31)

Regarding **Claim 7**, wherein each user comprises a customer premise equipment (CPE) station configured to provide communications for a plurality of connections associated with the CPE stations (110 per Fig 1 or CPE)

Regarding **Claim 8**, wherein each user is an individual connection (The applicant broadly claims "individual connection". The examiner interprets that the Base Station controls uplink of each CPE station per Fig 1 or individual connection.)

Regarding **Claim 9**, wherein the plurality of users is connected to the base station through one or more corresponding customer premise equipment (CPE) stations, and polling the particular user comprises directing the corresponding CPE station to grant unrequested bandwidth to the particular user (The base station grant bandwidth to the CPE station to assign as desired as shown in Fig 1. The CPE is responsible for distributing the bandwidth per Pg 6 lines 1-11)

Regarding **Claim 10**, wherein the parameter value for each user reflects a previous rate of use of bandwidth by the user (The polling of the user is dependent upon the available bandwidth which is dependent upon previous polling rate per Figs 6 & 8)

Regarding **Claim 11**, wherein the parameter value for each user reflects a quality of service requirement for the user (QoS per Pg 6 lines 13-25)

Regarding **Claim 12**, wherein the step of further comprising combining a plurality of different communication parameters to form a composite communication parameter, such that the parameter value for the particular user reflects a plurality of distinct communication parameter quantities applicable to the particular user (The CPE combines the needs across all services that the CPE is performing and provides the request to the Base Station per Fig 1. The base station grants bandwidth back to the CPE. The CPE is responsible for distributing per Pg 6 lines 1-10)

Regarding **Claim 13**, wherein the plurality of distinct communication parameter quantities includes a quantity of reflecting previous bandwidth use by the particular user and a quantity reflecting a quality of service requirement for the particular user (QoS per Pg 6 lines 12-25 and Figs 6 & 8)

Regarding **Claim 14**, wherein the step of selecting a polling rate and the step of changing a polling rate are both new polling rate selection steps which further comprise basing the new polling rate selecting upon a plurality of communication parameter quantities applicable to the particular user (Request for bandwidth is interpreted as QoS or quantities of parameters per Figs 6 & 8 and per Pg 2 lines 25-31 or Pg 6 lines 12-31)

Regarding **Claim 15**, wherein the plurality of distinct communication parameter quantities includes a quantity reflecting previous bandwidth used by the particular user and the quantity reflecting a quality of service requirement for the particular user (The request for bandwidth or communication parameter depends the on the previous bandwidth used as well as the QoS per Fig 6 & 8 and per Pg 2 lines 25-31 or Pg 6 lines 12-31)

Regarding **Claim 16**, wherein the step of selecting a polling rate for the particular user further comprises categorizing the particular user in one polling category of a finite number of polling categories in accordance with the parameter value and selecting a polling rate in accordance with the selected polling category, and the step of changing the polling rate for the particular user comprises categorizing the particular user in a different one of the polling categories, and changing the polling rate for the particular user to accord with the different polling category (Figs 6 & 8)

Regarding **Claim 17,** wherein the step of changing the polling rate for the particular user further comprises categorizing the particular user in one polling category of a finite number of polling categories based upon changing the parameter value of a particular user, assigning the particular user to a polling group of users according to the polling category of the particular user, and changing the polling rate for the particular user dependent upon the polling group to which the user is assigned (Figs 6 & 8)

Regarding **Claim 18**, wherein the step of changing the polling rate for the particular user comprises selecting from a substantially continuous spectrum of polling rates dependent at least in part on the parameter value (The applicant broadly claims "substantially continuous polling rates". The examiner interprets individual, multicast, and broadcast as "substantially continuous polling rates per Figs 6 & 8)

Regarding **Claim 19**, further comprising changing the polling rate for the particular user to zero (The applicant broadly claims "polling rate of zero". The examiner interprets "request for zero bytes" as "polling rate of zero" per Pg 18 lines 20-21.)

Regarding **Claim 20**, wherein the step of changing the polling rate for the particular user comprises basing the changed polling rate selection upon a plurality of communication parameter quantities of the particular user (The Base Station per Figs 1, 6, & 8 changes the polling rate based upon bandwidth allocation which is based upon combined parameters associated with QoS)

Regarding **Claim 21**, further comprising providing a contention request mechanism to obtain bandwidth requests from users whereby bandwidth is provided during which a plurality of users may request bandwidth per Pg 24 line 5-Pg 34 line 17)

Regarding **Claim 22**, further comprising providing the contention request mechanism to users assigned a zero rate of polling (The applicant broadly claims "polling rate of zero". The examiner interprets "request for zero bytes" as "polling rate of zero" per Pg 18 lines 20-21. Contention resolution is defined per Pg 24 line 5-Pg 34 line 17)

Regarding **Claim 23**, further comprising providing a "poll-me" mechanism wherein a particular user sets values of one or more bits of data within uplink bandwidth previously assigned to the particular user, and the particular values set for the data bits conveys a request for the base station to provided bandwidth within which the particular user can request allocation of bandwidth (Pg 26 line 4-pg 27 line 8)

Regarding **Claim 24**, wherein the polling rate for a particular user is set to zero when an existing pattern of uplink bandwidth usage by the particular user provides "poll-me" opportunities sufficient to obtain bandwidth meeting QoS guarantee for the particular user (The reference teaches un-polled active CPE or CPE which the polling rate has been set to zero is provided a "poll-me" opportunity per Pg 20 lines 1-33)

Regarding **Claim 25**, wherein the uplink bandwidth is allocated to the particular user at least at a rate determined by a user uplink constant bit rate (CBR) connection and provides the sufficient "poll-me" opportunities (CBR per Pg 9 lines 25-Pg 10-Pg 10 line 3 and poll-me per Pg 26 line 4-Pg 27 line 8)

Regarding **Claim 26**, further comprising selecting a common communication parameter common to a plurality of users sharing a link, and changing polling rate for the particular user in response to changes in the common parameter (bandwidth allocation or parameter and polling changed due lack of bandwidth per Figs 6 & 8)

Regarding **Claim 27**, wherein the base station and users communicate across a broadband wireless communication link, and wherein polling comprises providing unrequested uplink bandwidth as an opportunity to request further bandwidth (CBR or Broadband per Pg 9 lines 25 and unrequested per Fig 9 & Fig 11)

Regarding **Claim 28**, further comprising providing a mechanism to embed a request for bandwidth within a previously granted uplink bandwidth (Piggybacking per Fig 9 or mechanism)

Regarding **Claim 29**, further comprising selecting a polling rate of zero for users whose present rate of uplink bandwidth usage provides opportunities to embed bandwidth requests within the present allocated bandwidth sufficient to initiate bandwidth increases satisfying all bandwidth changes required by a quality of service guaranteed to the user (un-polled active CPE or polling rate of zero for users per (The reference teaches un-polled active CPE or CPE which the polling rate has been set to zero is provided a "poll-me" opportunity per Pg 20 lines 1-33. Piggybacking per Pg 15 line 22-Pg 16 line 13)

Regarding **Claim 30**, further comprising selecting a common communication parameter to a plurality of users sharing a link, and changing the polling rate for the particular user in response to changes in the common parameter (Figs 6, 8, 9, & 11)

Referring to **Claim 31**, Stanwood teaches: A method of obtaining bandwidth request from a plurality of users of a communication base station which provides communication uplink bandwidth on request to the users (The base station 106 per Fig 1 receives bandwidth request from the CPE which needs bandwidth for a plurality of services from a plurality of users for uplink communications per Fig 1) the method comprising:

Assigning a particular user to one of a plurality of polling categories (The CPE or user is assigned either individual polling, multicast, or broadcast polling per Figs 6 & 8)

Selecting a polling rate for the particular user in accordance with the polling category of that user (Based upon the availability of bandwidth a user is assigned individual rate, multicast, or broadcast rate per Figs 6 & 8)

Periodically polling the particular user for bandwidth requests at the selected polling rate (The CPE or user is polled for bandwidth allocation requests based upon the uplink subframe map table and the available bandwidth per Figs 6 & 8)

(i) assigning the particular user to a different polling category in response to a change in a communication status of the particular user (The Base station assigns a particular CPE or user to a individual, multicast, or broadcast polling based upon values in the uplink subframe map table and the available bandwidth per Figs 6 & 8)

(ii) changing the polling rate for the particular user in accordance with the different polling category to which the user is assigned (The Base station changes the CPEs polling category from individual, multicast, or broadcast based upon the availability of bandwidth and the value stored in the uplink subframe table per Figs 6 & 8)

In Addition Stanwood teaches:

Regarding **Claim 32**, wherein polling the particular user includes multicast polling to a multicast polling group including the particular user and another user (Fig 8)

Regarding **Claim 33**, wherein each member of the multicast polling group is assigned to the polling category to which the particular user is assigned (Pg 25 line 5-Pg 26 line 4 or per Figs 8 & 12-23)

Regarding **Claim 34**, wherein assigning the particular user to a polling category further comprises selecting the polling category based upon a value of a selected communication parameter applicable to the user (Pg 25 line 5-Pg 26 line 4 or per Figs 8 & 12-23)

Regarding **Claim 35**, wherein the selected communication parameter reflects modulation level or a forward error correction scheme (modulation per Pg 6 lines 12-26)

Regarding **Claim 36**, wherein the members of the multicast polling group are selected at least in part on a shared modulation level (modulation per Pg 6 lines 12-26 and multicast per Pg 25 line 5-Pg 26 line 4 or per Figs 8 and 12-23)

Regarding **Claim 37**, including providing contention polling to all users assigned to at least one of the quality of polling categories (contention polling per Pg 24 line 5-Pg 27 line 26)

Regarding **Claim 38**, wherein assigning the particular user to a polling category further comprises selecting the polling category based upon a value of a selected communication parameter which is applicable to the particular user (bandwidth allocation or communication parameter and polling per Figs 6 & 8)

Regarding **Claim 39**, further comprising assigning a plurality of users which are assigned to a particular polling category to a first multicast polling group (users are assigned a multicast connection id per Pg 25 line 5-Pg 26 line 4 & Figs 8-12-13)

Regarding **Claim 40**, assigning, to a second multicast polling group (The reference teaches multicast connection id as well as a next multicast group per Pg 25 line 5-Pg 26 line 4 & Figs 8-12-13)

A plurality of users which are assigned to the particular polling category and not to the first multicast polling group (The reference teaches multicast connection id as well as a next multicast group per Pg 25 line 5-Pg 26 line 4 & Figs 8-12-13)

Multicasting the first multicast polling group during a first time period (The reference teaches evaluation of the next multicast group which the examiner interprets that each multicast group inherently has a different time period per The reference teaches multicast connection id as well as a next multicast group per Pg 25 line 5-Pg 26 line 4 & Figs 8-12-13)

Multicast polling the second multicast polling group during a different second time period The reference teaches evaluation of the next multicast group which the examiner interprets that each multicast group inherently has a different time period per The reference teaches multicast connection id as well as a next multicast group per Pg 25 line 5-Pg 26 line 4 & Figs 8-12-13)

Regarding **Claim 41**, further comprising:

Further comprising assigning users to the particular polling category based upon a previous rate of uplink bandwidth usage by each user (The polling rate is based upon the availability of bandwidth. The availability of bandwidth is based upon the polling rate per Figs 6 & 8)

Regarding **Claim 42**, further comprising assigning each user to a polling group based at least in part upon quality of service requirements of the user (polling group assignment is based upon availability of bandwidth and what has been assigned in the uplink frame table per Figs 6 & 8)

Referring to **Claim 43**, Stanwood teaches: A method of obtaining bandwidth request from a plurality of users of a communication base station which provides communication uplink bandwidth on request to the users (The Base Station 106 per Fig 1 receives bandwidth request from the CPE which needs bandwidth for a plurality of services from a plurality of users for uplink communications per Fig 1) the method comprising:

Assigning a particular user to one of a plurality of polling categories (The CPE or user is assigned either individual polling, multicast, or broadcast polling per Figs 6 & 8)

Selecting a polling rate for the particular user in accordance with the polling category of that user (Based upon the availability of bandwidth a user is assigned individual rate, multicast, or broadcast rate per Figs 6 & 8)

Periodically polling the particular user for bandwidth requests at the selected polling rate (The CPE or user is polled for bandwidth allocation requests based upon the uplink subframe map table and the available bandwidth per Figs 6 & 8)

Selecting a different polling rate for the users in the particular group in accordance with a coa chnge in the communication parameter associated with the group (The Base station assigns a particular CPE or user to a individual, multicast, or broadcast polling based upon values in the uplink subframe map table and the available bandwidth per Figs 6 & 8. The Base station changes the CPEs polling category from individual, multicast, or broadcast based upon the availability of bandwidth and the value stored in the uplink subframe table per Figs 6 & 8)

In Addition Stanwood teaches:

Regarding **Claim 44**, wherein all users in a particular polling group are connections which share a common CPE station (CPE Station per Figure 1)

Regarding **Claim 45**, wherein users in a particular polling group share the same modulation (modulation or communication parameter per Pg 6 lines 12-31 and multicast assignment based upon bandwidth allocation or modulation parameter per Fig 6)

Regarding **Claim 46**, wherein all users in a particular polling group share the same forward error correction scheme (The reference teaches Reed Solomon encoding which inherently has forward error correction scheme per Pg 12 lines 25-Pg 13 line 2 and Fig 6 and Pg 11 line 16-Pg 11 line 9)

Regarding **Claim 47**, wherein all users in a particular polling group share the same quality of service requirements (QoS per Pg 2 line 25-Pg 3 line 5)

Claim Rejections - 35 USC § 103

4.0 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.0 **Claims 48-74** are rejected under 35 U.S.C. 103(a) as being unpatentable over Stanwood et. al. (WO 00/72626 dated 11/30/2000) which is an IDS document of record.

Referring to Claim 48, Stanwood teaches: A system for obtaining user uplink bandwidth requests in a communication station providing varying uplink bandwidth to a plurality of users which share a communication link to the station (The Base Station 106 or system per Fig 1 receives request for bandwidth from the CPE for varying uplink bandwidth requests per Fig 1 or users) the system comprising:

A polling policy module configured to obtain values of a first selected communication parameter which vary uniquely over time for a particular user, and to change a polling protocol for the user in response to a change in the value of the communication parameter (The Base Station has the ability to vary the polling from individual , multicast, or broadcast based upon the available bandwidth and the value stored in the uplink subframe table per Figs 6 & 8)

A polling control module configured to direct polling of the particular user in accordance with changed polling protocol (The Base Station has the ability to direct the polling of a particular CPE or user to individual, multicast, or broadcast per Figs 6 & 8)

A channel bandwidth allocation module configured to direct an allocation of uplink bandwidth to the user in accordance with the polling directed for the particular user (The base station has the ability to allocate uplink bandwidth to a particular CPE or user per Figs 6 & 8)

Stanwood does not particularly call for: a polling policy module, polling control module, or channel bandwidth allocation module but teaches that the base station performs all of the functions the polling policy module, polling control module, and the channel bandwidth allocation module per Figs 6 & 8.

It is within the level of one skilled in the art to implement the base station in hardware and software; therefore, it is within the level of one skilled in the art to implement the base station as polling policy module, a polling control module, and a channel bandwidth allocation module.

In Addition Stanwood teaches:

Regarding **Claim 49**, wherein the polling policy module is further configured to obtain a value of an additional communication parameter, and to change the polling protocol for the user in response to changes in the additional communication parameter (bandwidth request based upon QoS which consists of more than one parameter per Pg 2 line 25-33 or Pg 6 line 12-31. Polling changed based upon available bandwidth per Fig 6 & 8 or more than one parameter)

Regarding **Claim 50**, wherein the polling policy module is further configured to form a composite communication parameter for the user reflecting the first communication parameter and the additional communication parameter, and to change the polling protocol for the user in response to changes in the composite communication parameter (The CPE creates a composite request for all of the services and sends this to the base station and the base station changes the polling protocol per Figs 6 & 8)

Regarding **Claim 51**, wherein the communication parameters include a parameter reflecting previous bandwidth use by the particular user and a parameter reflecting a quality of service requirement for the particular user (Figs 6 & 8 shows that bandwidth allocation is performed and then bandwidth allocation is reperformed. It would have been obvious to one of ordinary skill in the art at the time of the invention that because of the feedback iterations that the previous bandwidth allocation affects the parameter reflecting the quality of service)

Regarding **Claim 52**, wherein the polling policy module is further configured to obtain a common communication parameter common to a plurality of users sharing a link, and to change the pooling protocol for the particular user in response to a change in the common parameter (The base station receives a composite request for all services and send this to base station per Figs 6 & 8)

Regarding **Claim 53**, wherein the change in polling protocol is a change in rate of polling the user (individual, multicast, or broadcast or polling protocols per Figs 6 & 8)

Regarding **Claim 54**, wherein the change in pooling protocol is between periodically polling the user and polling the user only upon request (Individual or periodically polling per Fig 6 and Pool-me per Pg 26 line 3-Pg 27 line 9 or only upon request)

Regarding **Claim 55**, further comprising an individual poll module configured to direct polls to users individually, and multicast polling module configured to direct polls to groups of users concurrently, wherein the change in polling protocol is a change between individually polling the users concurrently, wherein the change in polling protocol is a change between individually polling the user and multicast polling the user (Figs 6 & 8)

Regarding **Claim 56**, further comprising a contention resolution module configured to resolve bandwidth request collisions (Pg 24 line 5-Pg 27 line 9)

Regarding **Claim 57**, further comprising a broadband wireless communication link to the users (CBR or broadband per Pg 9 line 16-Pg 10 line 7)

Regarding **Claim 58**, wherein the channel bandwidth allocation module is further configured to poll users by allocating unrequested uplink bandwidth to the users as an opportunity to request further bandwidth (Pg 24 line 5 –Pg 27 line 26)

Regarding **Claim 59**, further comprising subframe map queues configured to specific distribution of uplink bandwidth between a plurality of users sharing a communication link to the system station (626 per Fig 6)

Regarding **Claim 60**, wherein each user is a group of one or more individual connections treated as a logical unit sharing a common identifier value (The reference teaches that connections have connection ID or common identifier value per Pg 18 lines 1-10)

Regarding **Claim 61**, wherein the first communication parameter value for each user reflects a previous rate of bandwidth use by the user (Figs 6 & 8 shows that bandwidth allocation is performed and then bandwidth allocation is re-performed. It would have been obvious to one of ordinary skill in the art at the time of the invention that because of the feedback iterations that the previous bandwidth allocation affects the parameter reflecting the quality of service)

Regarding **Claim 62**, wherein the first communication parameter value for each user reflects a composite quality of service requirement for a plurality of connections of the user (The CPE sends a composite request to the base station per Fig 6 & 8)

Regarding **Claim 63**, further comprising a poll-me messaging processing module configured to examine an uplink receive queue for messages indicating a request to be polled (Pg 26 line 3-Pg 27 line 9)

Regarding **Claim 64**, further comprising a bandwidth request processing module configured to device uplink bandwidth requests from received uplink data, and to direct the channel bandwidth allocation module to allocate bandwidth to requesting users in corresponding uplink subframe maps (Requests per Pg 26 line 3-Pg 27 line 26 and uplink subframe map per Figs 6 & 8)

Regarding **Claim 65**, wherein th bandwidth request processing module is further configured to derive bandwidth requests piggy backed on data packets per Pg 27 lines 10-26)

Regarding **Claim 66**, wherein the polling policy module is further configured to categorize the particular user in one of a finite number of polling categories, and to select the polling protocol for the user in accordance with the selected polling category (Figs 6, 8, 9, & 11)

Regarding **Claim 67**, wherein the polling policy module is further configured to halt polling for a particular user when an existing pattern of uplink bandwidth usage by the particular user provides 'poll-me' opportunities sufficient to obtain bandwidth meeting the QoS guarantee for the particular user (The reference teaches un-polled active CPE or CPE or halting polling for a particular user is provided a "poll-me" opportunity in order guarantee QoS for a user per Pg 20 lines 1-33)

Referring to **Claim 68**, Stanwood teaches: A system for obtaining bandwidth requests form a plurality of users of a communication base station which provided communication uplink bandwidth on request to the users (The base station 106 or system per Fig 1 receives request for bandwidth from a plurality of CPE or users for varying uplink bandwidth per Fig 1) the system comprising:

A channel bandwidth allocation module configured to direct providing of the urequested bandwidth to the particular user in accordance with a selected polling rate (The base station has the ability to assign upon unused bandwidth to change the polling rate based upon receipt of a piggyback request or receipt of Poll Me Bit Usage per Figs 6, 8, 9, & 11)

A polling policy module configured to:

Assign a particular user to one of a plurality of polling categories (The base station has the ability to vary the polling from individual , multicast, or broadcast based upon the available bandwidth and the value stored in the uplink subframe table per Figs 6 & 8)

Select a polling rate for the particular user in accordance with the polling category of that user (The Base Station has the ability to assign CPE to individual, multicast, or broadcast polling rates per Figs 6 & 8)

Assign the particular user to a different polling category in response to a change in a communication status of the particular user (The base Station has the ability to assign the CPE or user to individual, multicast, or broadcast polling. The Base Station has the ability to change the polling rate based upon receipt of a piggyback request or Poll Me Bit Usage per Figs 6, 8, 9, & 11)

Change the polling rate for the particular user in accordance with the different polling category to which the user is assigned (The Base Station has the ability to change the polling rate based upon receipt of a piggyback request or Poll Me Bit Usage to which the user is assigned per Figs 6, 8, 9, & 11)

Stanwood does not particularly call for: channel bandwidth allocation module or a polling policy module but teaches that the Base Station performs all of the functions of the bandwidth allocation module and polling policy module per Figs 6, 8, 9, & 11.

It is within the level of one skilled in the art to implement the base station in hardware and software; therefore, it is within the level of one skilled in the art to implement the Base Station as channel bandwidth allocation module and a polling policy module.

In Addition Stanwood teaches:

Regarding **Claim 69**, wherein the polling policy module is further configured to select the polling category of the particular user based at least in part upon a value of a selected communication parameter applicable to the particular user (The base station selects polling based upon previous assignment of bandwidth allocation and available bandwidth per Fig 6)

Regarding **Claim 70**, wherein the selected communication parameter reflects modulation level or forward error correction scheme (modulation or communication parameter per Pg 6 lines 12-31)

Regarding **Claim 71**, further comprising a multicast polling module configured to assign the particular user to a multicast polling group based at least in part upon modulation level shared with other members of the multicast polling group (modulation or communication parameter per Pg 6 lines 12-31 and multicast assignment based upon bandwidth allocation or modulation parameter per Fig 6)

Regarding **Claim 72**, further comprising a multicast polling policy module is further configured to direct the multicast polling module to direct contention polling of all users assigned to at least one of the plurality of polling categories (Contention resolution per Pg 24 line 5-Pg 26 line 3 and multicast polling per Pg 25 line 5-Pg 26 line 4)

Referring to **Claim 73**, wherein the multicast polling module is configured to assign a plurality of users which are assigned to the at least one polling category to a first multicast polling group (Multicast per Pg 25 line 5-Pg 26 line 4)

Regarding **Claim 74**, further comprising a channel bandwidth allocation module, and where the multicast polling module is further configured to

Assign, to a second multicast polling group, a plurality of users which are assigned to the particular polling category and not to the first multicast polling group (The reference teaches multicast connection id as well as a next multicast group or second group per Pg 25 line 5-Pg 26

Multicast polling the first multicast polling group during the first time period (The reference teaches that the next multicast group is processed so there must inherently be a time period for each group per Pg 25 line 5-Pg 26)

Multicast polling the second multicast polling group during a different second time period (The reference teaches that the next multicast group is processed so there must inherently be a time period for each group per Pg 25 line 5-Pg 26)

Claim Rejections - 35 USC § 112

6.0 The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7.0 The term ""substantially continuous" in claim 18 is a relative term which renders the claim indefinite. The term "substantially continuous" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Specification

8.0 The disclosure is objected to because of the following informalities: A Figure number is not defined on Pg 1 at the end of Paragraph (0003). Appropriate correction is required.

Conclusion

8.0 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert W Wilson whose telephone number is 571/272-3075. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571/272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Robert W. Wilson
Robert W Wilson
Examiner
Art Unit 2661

RWW
December 3, 2004

KENNETH VANDERPUYE
PRIMARY EXAMINER